# @inter-office communication

to:	- (	Sholtis, Enforcement Section, DSHWM				e:	3/10/89					
from: .	MO	Michael Eggert through Jan Carlson, DGW						_				
subiec	ıt:		-TEC	_	and	Cutting	Systems,	Inc.	Ground	Water	Monitoring	

An annual RCRA inspection was performed by the Ohio EPA on February 16, 1989 at the L-TEC Welding and Cutting Systems, Inc. to determine compliance with applicable hazardous waste state and federal regulations. The inspection was conducted by Kay Springer, DSHWM-NEDO, Joe Biaglow, DGW-NEDO and Michael Eggert, DGW-CO. Al Fritz and Jim Griswold represented L-TEC during the inspection. The Division of Ground Water's primary objectives during the inspection were to verify the violations and deficiencies as presented in the June 30, 1987 Comprehensive Ground Water Monitoring Evaluation (CME) and to determine current compliance with the ground water monitoring requirements for interim status facilities. The 1987 CME was conducted by Versar Inc. as contracted by the USEPA. Prior to the inspection, the 1987 CME, annual ground water reports, the closure plan for the surface impoundments and the Ohio EPA files were reviewed.

A summary of the violations and deficiencies as determined during the 1987 CME are presented in Tables 6 and 7, respectively. The CME violations, 1 through 5, will be addressed individually with a conclusion as to whether the DGW agrees with the citation.

#### 1987 CME VIOLATIONS

EPA Region 5 Records Ctr.



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<u>Violation 1 - 40 CFR 265.91(a)(2) /OAC 3745-65-91(A)(2)</u>

The DGW agrees that the shallow monitoring zone is not adequately designed to immediately detect the release of hazardous waste or hazardous waste constituents in all downgradient directions. The facility had proposed the installation of four (4) additional downgradient shallow monitoring wells to better define the potential effects from the regulated surface impoundments as part of the closure plan for the units. At the request from USEPA, in a letter dated June 17, 1987 (2 weeks prior to the CME inspection), L-TEC modified their ground water monitoring system per comments made on the closure plan for the regulated units. L-TEC installed 3 bedrock interface wells as opposed to 4 shallow monitoring wells to define the potential vertical extent of contaminant migration. The facility has indicated statistically significant differences in their detection monitoring program shallow monitoring wells and entered into an assessment monitoring program in 1985 at the request of Ohio EPA. USEPA believes that the deep wells will address this assessment requirement.

The DGW recommends to DSHWM that this violation <u>not</u> be pursued as the facility agreed to all modifications in a letter dated July 10, 1987 as requested by USEPA just two weeks prior to the CME inspection. In addition, Ohio EPA files contain an IOC from Milton Rinehart to Ed Kitchen, DSHWM dated July 3, 1984 stating that the shallow ground water monitoring system met the requirements of an adequate detection monitoring system.

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However, it is necessary for L-TEC to install an additional bedrock interface well adjacent to shallow well 202. This deep well is necessary to adequately monitor immediately downgradient of the Lime Pond. The ground water potentiometric surface data presented in the facility's 1988 annual report indicates a flow direction to the north of the Lime Pond and the two downgradient wells, 301 and 305, will not detect hazardous constituents potentially released from this unit. The Lime Pond is closing as a landfill and requires 30 years of post-closure monitoring, while the other two surface impoundments located closer to the other two deep wells (301 and 305) are attempting to "clean" close. L-TEC must also reinstate the shallow well 203, which is downgradient of the Lime Pond, as part of the post-closure monitoring program and monitor site specific parameters as listed in the closure plan as modified by the USEPA letter dated June 17, 1987.

#### Violation 2 - 40 CFR 265.94 (a)(2)(i) / OAC 3745-65-94 (A)(2)(a)

The facility has failed to submit the initial background concentrations for the interim primary drinking water standards within 15 days after completing quarterly analysis in 1982 (wells 105A, 201, 202, and 203), in 1984 (well 214), and in 1988 (wells 301, 305 and 314).

The data for these initial background wells has been submitted but not in the time requirements specified in the RCRA regulations. The DGW recommends that the DSHWM proceed with enforcement on this citation.

#### <u>Violation 3 - 40 CFR 265.93 (c)(2) / OAC 3745-65-93 (C)(2)</u>

L-TEC failed to immediately obtain split samples from downgradient wells to confirm statistically significant changes in a number of wells. The CME has summarized specific times when the facility failed to conduct resampling, Table 4.

The DGW recommends that DSHWM proceed with the enforcement action on this citation but should be aware that the facility did eventually resample the wells and split samples. In addition, the facility entered into assessment in November 1985 to verify the statistical significance of the indicator parameters and has suggested that off-site activities may be affecting the indicator parameters in downgradient monitoring wells. The facility indicated statistically significant changes in their monitoring wells for pH in downgradient monitoring wells following 1986 sampling activities during and TOC and TOX following sampling activities in 1983-1985. The 1989 inspection checklist lists additional sampling events during 1987 and 1988 that the facility observed statistically significant changes in their monitoring program and did not resample. L-TEC contributes these significant changes to off-site activities and lack of variance in the The 1988 sampling event included additional site specific metal constituents and the results indicate concentrations below the MCL's and the metal concentrations in the upgradient and downgradient wells in the shallow and bedrock interface zones were reported near or below their detection limits. Nonetheless, whether off-site activities are affecting the downgradient monitoring wells, the facility should have made a determination within the same

time period instead of ignoring the requirement of immediately resampling. They are in violation of not resampling immediately to confirm statistically significant changes in their monitoring wells.

#### Violation 4 - 40 CFR 265.93 (d)(1) / OAC 3745-65-93 (D)(1)

L-TEC failed to provide written notice to the USEPA or Ohio EPA within 7 days of confirmation that observed statistically significant changes had been confirmed.

The facility did resample in May 1985 and presented data in a Part B Permit Application submitted in October 1985, however Ohio EPA's basis for requiring the facility to enter assessment was the recognition of statistically significant changes in March 1984 and April 1985.

The DGW recommends that the DSHWM proceed with the enforcement action on this citation.

#### Violation 5 - 40 CFR 265.94 (b)(2) / OAC 3745-65-94 (B)(2)

The DGW recommends that this violation <u>not</u> be pursued because the facility did enter assessment monitoring and addressed ground water flow rates in a 1986 report. L-TEC has reinstated their detection monitoring program which currently includes detection monitoring constituents and a modified list of metal constituents required by USEPA for the closure of the units. An evaluation of the 1988 ground water quality data submitted to the Ohio EPA indicates those metal constituents of concern are not elevated above background wells.

#### 1989 ANNUAL RCRA INSPECTION VIOLATIONS

The following additional violations were discovered based upon the 1987 and 1988 data review as well as the RCRA inspection conducted at the facility on February 16, 1989. Additional comments pertaining to each violation are attached to the inspection checklist.

#### OAC 3745-65-93(B) / 40 CFR 265.93 (B)

The facility has not obtained four replicate measurements of each indicator parameter after the first year of monitoring for all monitoring wells. The facility is also inappropriately applying the statistical test to the data collected. L-TEC is collecting only one sample per indicator parameter and averaging the two semi-annual events for the statistical analysis. The facility must collect four replicate samples per sampling event of each indicator parameter and statistically compare the data for each semi-annual sampling event to the established background data.

#### OAC 3745-65-93 (F) / 40 CFR 265.93 (f)

L-TEC has not evaluated the ground water elevation data as required to determine whether the monitoring detection system was in compliance with OAC 3745-65-91(A) / 40 CFR 265.91(a). The facility has submitted annual ground water elevation data but has not presented an evaluation of the ground water flow direction. The last evaluation of ground water potentiometric surface data was presented in a Part B Permit application using data collected from 1984.

An Ohio EPA evaluation of the 1988 potentiometric surface data for the bedrock interface wells indicate ground water flow direction to the north-northeast and clearly indicates that the current downgradient bedrock interface monitoring wells will not detect releases from the Lime Pond area. A new bedrock interface well should be installed adjacent to shallow well 202. In addition, an evaluation of the shallow monitoring system using the ground water elevation data still indicates that radial flow is occurring and that well 203, south of the impoundments, should be reinstated as a downgradient monitoring well.

The reasons for not citing a violaiton of 40 CFR 265.91(a)(2) / OAC 3745-65-91(A)(2) were previously explained on page 1 in the dicussion of violation 1 listed in the 1987 CME. Also, the facility has agreed to new well installations and ground water monitoring modifications as requested by USEPA. The DGW recommends only citing OAC 3745-65-93(F) which requires the facility to submit an annual ground water elevation evaluation to determine if they are in compliance with OAC 3745-65-91(A). The facility must submit annually a ground water elevation evaluation to determine if the depths, numbers and locations of all upgradient and downgradient monitoring wells are sufficient to detect hazardous waste constituents that may be released from the regulated surface impoundments.

#### 1987 CME DEFICIENCIES

The deficiencies as listed in Table 7 of the 1987 CME are addressed below with an appropriate recommendation to DSHWM by the DGW as to whether we support the alleged deficiencies.

#### <u>Deficiency</u> <u>Explanation</u>

- 1. This deficiency has been addressed by the facility installing bedrock interface wells, however as discussed above, the bedrock interface system should be modified based on the evaluation of the ground water potentiometric data.
- 2. L-TEC should report all necessary information as required by the regulations to both the Ohio EPA and the Regional Administrator (USEPA Region V).
- 3. This is being addressed as a violation.

- 4. All monitoring wells, except piezometers, have protective casing installed and the facility has addressed this deficiency.
- 5. The facility should provide documentation to the Ohio EPA regarding the actual dates the top of well casings were surveyed for the shallow and bedrock interface wells installed in 1987.
- 6. It is recommended that L-TEC install locking caps on all of their monitoring wells. The facility claimed in 1987 that the boundary of the facility was fenced and secure, thus providing for adequate protection. However, during the 1989 inspection, gates were found to be open for vehicular and train traffic.

Deficiencies 7 through 12 concern the facility's sampling and analysis plan and will be addressed below with the deficiencies discovered during the 1989 inspection and record review.

### 1989 ANNUAL RCRA INSPECTION - DEFICIENCIES

Ground Water Sampling and Analysis

A review of the facility's ground water sampling and analysis plan and personal communication with Jim Griswold from L-TEC during the inspection revealed the following deficiencies that must be corrected to ensure that representative ground water samples are obtained from the facility's monitoring wells.

- 1. Ground water samples collected for metal analyses must be field filtered immediately upon removal from the well.
- 2. Specific conductance and pH must be measured in the field.
- 3. Calibration procedures for specific conductance and pH meters must be included in the sampling and analysis plan. L-TEC does not currently calibrate the specific conductance meter.
- 4. L-TEC must collect sample and equipment blanks (bailer and filtering apparatus) for QA/QC.
- 5. Samples must be emptied directly into the appropriate sample container. L-TEC currently uses a plastic bucket and transports the sample to the laboratory and than transfers the sample to the appropriate container.
- 6. Provide an adequate method for purge water disposal.
- 7. Specify the minimum detection limit for all constituents analyzed.

- 8. Document the amount of water purged from each well prior to sampling and specify the method used to calculate the volume. This should be recorded in the field log book.
- 9. Ground water samples should be collected as soon as sufficient volume has recovered in the well. According to the facility's logbook, 14 to 21 days are sometimes required for the bedrock interface wells to recover to a level where the facility can obtain enough water for sample requirements. The extremely long period required for the bedrock interface wells to recover may alter the ground water sample quality. The bedrock interface wells should be redeveloped to enhance sample yield, thus reducing the lenght of time required for well recovery owing to the collection of more representative in-situ ground water samples.

#### Ground Water Quality

L-TEC will have to re-establish the background water quality for indicator The ground water data collected previously used parameters in well 214. inappropriate sampling methods and is currently compared statistically to revised sampling methods for TOC and TOH. Specifically, prior to 1987 all TOC and TOH samples were filtered and all data collected for pH and specific conductance are L-TEC modified their sampling and analysis analyzed in the laboratory. procedures that incorporates acceptable sampling techniques for TOC and TOH but does not sample pH and specific conductance at the wellhead. background data generated for well 214 using filtered TOC and TOH data and comparing this data to unfiltered data is unacceptable. Background water quality for the pH and specific conductance indicator parameters should also be re-established for wells 214 and 314 using acceptable field analyses for these constituents.

#### Monitoring Well Construction

The following deficiencies concerning monitoring well construction were noted during the 1989 Annual RCRA inspection.

- The concrete surface seal at well 203 is in need of repair. It was
  observed during the inspection that the concrete pad was loose from the
  surrounding ground surface. The concrete surface seal should be set to
  below the local frost/feeze level. This is typically 3 to 4 feet beneath
  the land surface.
- 2. Piezometer 212 is in need of repair. It was noted during the inspection that this piezometer had been severed at the ground surface.

#### SUMMARY

The DGW recommends enforcement action on violations 2, 3 and 4 from the 1987 CME and recommends that enforcement action proceed on the two (2) new violations cited as a result of the 1989 RCRA inspection.

The DGW recommends that L-TEC address deficiencies 2, 4, 5, and 6 from the 1987 CME, and address the deficiencies as determined from the 1989 Annual RCRA inspection concerning the ground water sampling and analysis plan, reestablishment of the background water quality in wells 214 (all indicator parameters) and 314 (pH and specific conductance) and repair monitoring wells 203 and 212.

#### MLE/

cc: Gary Martin, Chief-DGW
 Tim Krichbaum, DGW-CO
 Debby Berg/Kay Springer, DSHWM-NEDO
 Chris Khourey/Joe Biaglow, DGW-NEDO
 Jim Saric, USEPA, Region V

TABLE 6
SUMMARY TABLE OF L-TEC'S VIOLATIONS OF THE INTERIM
STATUS STANDARDS FOR GROUND-WATER MONITORING

Description and Citation	Worksheet B Item	Checklist/Item
Failure to install sufficient downgradient monitoring	I-J.5.	
wells in locations appropriate for immediate detection	I-J.6.b.	B-1/5
of hazardous waste or hazardous waste constituents that may migrate from solid waste management units. 40 CFR 265.91(a)(2)	VIII-B.	
Failure to submit the initial background concentrations for the interim primary drinking water standards within 15 days after completing quarterly analysis in 1982 and in 1984 (first year for well 214). 40 CFR 265.94(a)(2)(	i)	8-1/13(a)
Failure to immediately obtain split samples from downgradient wells 105A, 201, and 203 to confirm the statistically significant increases in pH values following the 1986 sampling activities; and in downgradient wells to confirm statistically significant changes in TOC or TOX following sampling activities in 1983-1985. 40 CFR 265.93(c)(2)	VIII-A.	B-2/2 B-2/2(a)
Failure to provide written notice to the Regional Administrator within 7 days of confirmation that observed statistically significant changes had been confirmed. 40 CFR 265.93(d)(1)		8-2/3
Failure to include calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in ground-water in the annual reports submitted to the regional administrator.  40 CFR 265.94(b)(2)		B-2/4(f)(1)

## TABLE 7 SUMMARY TABLE OF DEFICIENCIES IN L-TEC'S GROUND-WATER MONITORING PROGRAM TO MEET INTERIM STATUS STANDARDS

	Description	Worksheet B Item	Checklist/Ite
<b>'.</b>	Doubt regarding whether upgradient and downgradient well are installed at appropriate depths to monitor the uppermost aquifer at the bedrock interface.	I-F.4.a. I-J.6.a. I-J.6.e. VIII-B.	B-1/4(a)(3)
•	Inconsistency in reporting to the Regional Administrator those sampling events and monitoring wells for which exceedances of the interim primary drinking water standa were observed.		B-1/13(b)
•	Doubt regarding whether four replicates of the contamination parameters are being taken during current semiannual sampling events.		B-1/9(a)(3)(i)
<b>.</b>	Absence of protective casings and bumper guards around monitoring wells.	I-G.4.d. II-B.1.b VII-B.	
•	Doubt regarding whether the surveyed elevations are accurate for monitoring wells which have had new caps installed after the survey was complete.		B-1/7
•	Absence of locking caps for ground-water monitoring wells	I-G.4.e II-B.4. VII-B.	
•	Absence of listing the specific sampling and analytical methods for detecting hazardous wastes or hazardous waste constituents in the facility's ground-water quality assessment program plan.		B-2/4(a)(2) B-2/4(a)(3)
	During sample collection, ground-water samples are not delivered directly to the sample containers.	III-E.7. IV-A.1.	
	Specific conductance is not measured in the field. The reported values for pH are the values measured in the analytical laboratory.	III-F.1.a. III-F.1.c.	
	No equipment, field, or trip blanks are prepared for analysis.	III-E.13. IV-A.7. IV-C.6.	
	All ground-water samples are filtered before filling sample containers.	IV-C.1. IV-C.4. IV-C.5.	

TABLE 4

WELL INSTALLATION AND SAMPLING DATES
FOR GROUND-WATER MONITORING WELLS AT THE L-TEC FACILITY IN ASHTABULA, OHIO

		1982	1983	1984	1985	1986
Well Number	Date of Installation <sup>a</sup>	02/08/82 05/24/82 08/16/82 11/04/82	04/13/83	03/27/84 06/27/84 09/18/84 12/18/84	04/02/85 09/16/85 11/11/85 12/10/85	01/06/86 02/03/86 10/29/8 <del>6</del>
105A	February 15, 1980	x	хх	d d	eelf	ft g
201	October 29, 1981	x	x x	d d	eeff	t I g
20	October 27, 1981	x	x x	d d	eett	119
<sub>203</sub> b	October 26, 1981	x x x x	. X X	d d	eeff	ff g
211	October 28, 1981				t f	ff g
212	October 28, 1981				1 1	ı f g
213	October 29, 1981				t t	t I g
214 <sup>c</sup>	October 30, 1981			x	X X f f	ı l y

<sup>&</sup>lt;sup>a</sup>Dates of wells installation were taken from the well logs provided in the RCRA Part B Permit application (L-TEC, 1985b).

bMonitoring well 203 was designated as the upgradient well for RCRA ground-water monitoring during 1982-1983. It was found to be influenced by the surface impoundment and was replaced.

CMonitoring well 214 was designated as the upgradient well in March 1984; well 203 continues to be used as a downgradient well.

dStatistically significant changes in pH or specific conductance were noted in all downgradient wells and statistically significant changes in TOX were noted for well 202, but no resampling was conducted.

eStatistically significant changes were noted; all five wells were resampled on May 6, 1985 for continuation sampling of pH and specific conductance. Indicator parameters TOX and TOC also indicated statistically significant changes but they were not resampled.

Sampling was conducted as part of assessment; samples were split and sent to two analytical labs (t-IEC, 1986a). Only the results for wells 105A, 201, 202, 203, and 214 were included in the annual reports.

Staboratory analytical reports indicate all 8 wells were sampled. Results for only wells 105A, 201, 202, 203, and 214 were included in annual reports.

## RCRA INTERIM STATUS INSPECTION FORM

SUBPART F: GROUND WATER MONITORING

Typ	e of	facility: (check appropriately)	<u>Ye ş</u>	<u>No</u>	<u> Unknown</u> <u>Walved</u> -
	a) b) c)	surface impoundment landfill land treatment facility	<u>×</u>	<u></u> -∠ <u>×</u>	LANDFILL
<u>NO 1</u>	<u>(E:</u>	UNDER INTERIM STATUS STANDARDS A WASTE PILE IS NOT SUBJECT TO GROUND WATER MONITORING REQUIREMENTS. PLEASE NOTE, HOWEVER, THAT IF ANY HAZARDOUS WASTE FROM A WASTE PILE IS LEFT IN PLACE AT CLOSURE, THE "WASTE PILE" BECOMES A "LANDFILL" AND MUST MEET POST-CLOSURE RULES APPLICABLE TO LANDFILLS.			
Gro	ound 1	Nater Monitoring Program			
٦.		the ground water monitoring program reviewed prior to site visit? "No",	×		
	a)	Was the ground water program reviewed at the facility prior to site inspection?			
2.	fac aqu	a ground water monitoring program (capable of determining the ility's impact on the quality of ground water in the uppermost ifer underlying the facility) been implemented? .90(a) [3745-65-90(A)]			X See Comment
3.	aqu	at least one monitoring well been installed in the uppermost lifer hydraulically upgradient from the limit of the waste agement area? 265.91(a)(l) [3745-65-91(A)(l)]	×		
	a)	Are ground water samples from the uppermost aquifer, representative of background ground water quality and not affected by the facility (as ensured by proper well number, location and depths)?	_X_		See Comment

- 4. Have at least three monitoring wells been installed hydraulically downgradient at the limit of the waste handling or management area? 265.91(a)(2) [3745-65-91(A)(2)]
  - a) Do well number, locations and depths ensure prompt detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer?
- 5. Have the locations of the waste management areas been verified to conform with information in the ground water program?
  - a) If the facility contains multiple waste management components, is each component adequately monitored?
- 6. Do the numbers, locations, and depths of the ground water monitoring wells agree with the data in the ground water monitoring system program? If "No", explain discrepancies.
- 7. Well completion details. 265.91(c) [3745-65-91(C)]
  - a) Are wells properly cased?
  - b) Are wells screened (perforated) and packed where necessary to enable sampling at appropriate depths?
  - c) Are annular spaces properly sealed to prevent contamination of ground water?

<u>Y05</u>	No	<u>Unknown</u> <u>Walved</u>
		see Comment.
<u></u>	X	See Grant
×		
$\times$		See Comment
$\overline{\star}$	***************************************	
$\overline{\chi}$		
7		******
		_

		<u>Y05</u>	NO	nukuomu Mained
	as a ground water sampling and analysis plan been developed? 65.92(a) [3745-65-92(Λ)]	X		_ See Commer
a)	) Has 1t been followed?			-
b)	) Is the plan kept at the facility?	X		
c)	) Does the plan include procedures and techniques for:			
	1) Sample collection?	上		
	2) Sample preservation?	X		
	3) Sample shipment?	又		
	4) Analytical procedures?	<u>*</u>		
	5) Chain of custody control?	1	-	
qı	re the required parameters in ground water samples being tested uarterly for the first year? 265.92(b) [3745-65-92(B)] nd 265.92(c)(1) [3745-65-92(C)]	<u>×</u>		
a j	) Are the ground water samples analyzed for the following:	** * *		
	<ol> <li>Parameters characterizing the suitability of the ground water as a drinking water supply? 265.92(b)(1) [3745-65-92(B)(1)]</li> </ol>	X		
	2) Parameters establishing ground water quality? 265.92(b)(2) [3745-65-92(B)(2)]	¥		
	3) Parameters used as indicators of ground water contamination? 265.92(b)(2) [3745-65-92(B)(3)]	×		See Comment
	(1) For each indicator parameter are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 265.92(c)(2) [3745-65-92(C)(2)]	. ×		

				<u>Yes</u>	<u>No</u>	<u>Unknown</u> <u>Walved</u> -
•		(11)	Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s) during the first year? 265.92(c)(2) [3745-65-92(C)(2)]	<u>×</u>		
b)			lities which have completed first year ground water sampling ysis requirements:			
	1		samples been obtained and analyzed for the ground water  1ty parameters at least annually? 265.92(d)(1) [3745-65-92(D)(1)]			<u>x</u>
	2	grou	samples been obtained and analyzed for the indicators of nd water contamination at least semi-annually? (4 replicate urements per sample) 265.92(d)(2) [3745-65-92(D)(2)]	$\mathbf{X}$		Sel Comment
c)			und water surface elevations determined at each monitoring h time a sample was taken? '265.92(e) [3745-65-92(E)]	上	<del></del>	sel comment
ď			und water surface elevations evaluated annually to determine whether toring wells are properly placed? 265.92(f) [3745-65-92(E)]		X.	All Comment
e)	. 0	f monit	s determined that modification of the number, location or depth oring wells was necessary, was the system brought into compliance .91(a) [3745-65-91(A)]? 265.93(f) [3745-65-93(F)]	<u>:</u>	-	<u>_X</u>
			ne of a ground water quality assessment program been 65.93(a) [3745-65-93(A)]	×		
a	) 0	oes 1t	describe a program capable of determining:			
	1	•	her hazardous waste or hazardous waste constituents have red the ground water?	$\overline{X}$		
	. 2		rate and extent of migration of hazardous waste or ardous waste constituents in ground water?	<b>X</b>		
	3		entrations of hazardous waste or hazardous waste tituents in ground water?	<u>X</u>		